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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/869,184 | 06/20/2001 | Marcus Menden | E02P01US | 2261 |

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EXAMINER

TON, ANABEL

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| ART UNIT | PAPER NUMBER |
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2875

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/869,184

Applicant(s)

MENDEN, MARCUS

Examiner

Anabel M Ton

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 43-45 and 47-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 43-45 and 47-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 43-45, 47-70, 75-80 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Filipovsky (WO 99/39319) and further in view of Ando et al (5,836,676)

3. Filipovsky discloses the claimed invention a lighting system for illuminating hollow Elements such as signs, inscriptions, letters, and relief letters, comprising: printed circuit boards having different sizes and provided with different numbers of LEDs in accordance with the different sizes, cables for connecting the printed circuit boards to one another and/or for connecting the printed circuit boards to a voltage source, attachment elements for attaching the printed circuit boards to a desired location, wherein, for illuminating a hollow element, several of the printed circuit boards are selected according to a shape of the hollow element and arranged and connected to one another following the shape of the hollow element (figs 17A-17C, pages 43-44 lines 23-35 and 1-9 respectively). Filipovsky does not specifically recite the LED chips having an irradiation angle of more than 150° providing uniform illumination.

4. Ando et al discloses LED chips having an irradiation angle of more than 150 degrees providing uniform illumination (fig 6). It would have been obvious to one of

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ordinary skill in the art at the time the invention was made to provide an LED lighting assembly with LED chips having an irradiation angle of 150 degrees or more to an illuminated sign for the purpose of providing uniform illumination since lighting systems that provide uniform illumination are desired, especially for signs and such, so as to properly illuminate the sign.

- The LEDs are arranged on, in each case, one flat side of a printed circuit board, wherein the surface of the flat side, fitted with the LEDs, of each printed circuit board is significantly smaller than the surface to be illuminated. (Filipovsky);
- At least one transformer for transforming a mains voltage to an operating voltage of the LEDs, wherein the transformer is voltage stabilized;
- The LEDs are arranged on, in each case, one flat side of a printed circuit board, wherein the surface of the flat side, fitted with the LEDs, of each printed circuit board is significantly smaller than the surface to be illuminated (figs 12-14)
- The printed circuit boards have different sizes
- Each printed circuit board has at least two connecting points, each with a positive lead and a negative lead for current, wherein the cables are connected by means of a standardized plug to the connecting points (figs 12-14, 1c)
- The connecting points and the plug are embodied in such a way that a plug which is connected to a connecting point protects the positive and negative leads against moisture;

- The plug has a latching element, which, after the plug has been fitted onto a printed circuit board, latches with a corresponding element provided for that purpose on the printed circuit boards.
- The transformer is protected against moisture.
- At least one regulating module for regulating selectively a power supply to at least one of individual ones of the printed circuit boards and individual ones of the LEDs on the printed circuit boards (claims 12-14);
- An attachment element having at least one bearing surface for a printed circuit board and a mounting element which latches to the printed circuit board and presses the printed circuit board against the bearing surface. (1c);
- A power supply unit with a DEAD-OFF module, which terminates the life of the power, supply unit if overheating by a predefined limiting value occurs (claim 25).
- A control module configured to automatically switching on or off the lighting system when predefinable peripheral conditions occur, for example times or brightness levels (claim 3).
- A regulating module configured to selectively regulate the power supply of individual printed circuit boards and/or individual LEDs on the printed circuit boards (claim 22);
- A power supply unit being vacuum sealed and configured for external use;
- A solar module comprising a buffer battery and a voltage monitor (page 13, lines 3-25);
- At least one protective resistor configured to protect the LEDs;

- Preferably two to four LEDs, are connected in series with one protective resistor in each case on each printed circuit board;
- All of the LEDs are arranged on one flat side of the printed circuit board, wherein no other components protruding from the flat side are arranged on the flat side on which the LEDs are arranged;
- The flat side on which the LEDs are arranged is constructed so as to reflect light, and is in particular white or mirror-coated;
- The printed circuit board is weather-resistant and has a coating which protects the conductor tracks and the LEDs against moisture;
- All the LEDs provided on the printed circuit board irradiate light of the same color;
- The LEDs are arranged on the printed circuit board in each case in groups of three located close to one another, a group of three comprised of LEDs with three different colors and being suitable for additive color mixing;
- At least three LEDs are arranged in a straight line on the printed circuit board, the distance between two adjacent LEDs being approximately 14 to 20;
- An opening configured to receive an attachment element for attaching the printed circuit board.
- At least two connecting points, each with a positive lead and a negative lead for current, wherein each one of the connecting points is configured to be connected to standardized plugs.
- A guide groove arranged in the vicinity of each connecting point and configured to guide one of the plugs.

- A corresponding element, which is at least partially complementary to a latching element of a plug, provided in the vicinity of each connecting point;
- The corresponding element is a mounting opening.

An attachment element having a flat side and a self-adhesive film provided on the flat side;

- With regards to method claim 80, the structural limitations in claim 80 render the claim rejected under the reasons cited above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 71-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flipovsky.

2. With regards to the printed circuit board is approximately 50 to 60 mm long, approximately 8 to 16 mm wide and approximately 1 to 3 mm thick, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have such a sized printed circuit board, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

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3. With regards to six LEDs are arranged in a straight line and the printed circuit board is approximately 90 to 120 mm long, approximately 8 to 16 mm wide and approximately 1 to 3 nm thick, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have such a sized printed circuit board, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

4. With regards to nine LEDs are arranged offset from one another in a zigzag shape on two straight lines on the printed circuit board, the distance between the two lines being approximately 25 to 35 mm and the distance between two adjacent LEDs arranged on a line being approximately 30 to 40 mm, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have such a sized printed circuit board, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anabel M Ton whose telephone number is (703) 305-1084. The examiner can normally be reached on 08:00-16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

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872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Anabel M Ton
Examiner
Art Unit 2875

AMT
June 15, 2003

A handwritten signature in black ink, appearing to read 'Thomas M. Sember', with a long horizontal flourish extending to the right.

THOMAS M. SEMBER
PRIMARY EXAMINER